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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/641,147	08/17/2000	Sung- Oh Hwang	678-522 (P9490)	4729

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EXAMINER

CHANG, EDITH M

ART UNIT PAPER NUMBER

2637

DATE MAILED: 08/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/641,147	Applicant(s) HWANG ET AL.	
	Examiner Edith M Chang	Art Unit 2637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2000.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 August 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12052003.05032004</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, in **claim 17**, the “a mask generator”, “a first adder for adding the *first sequence* with the *second sequence*” and a “second adder for adding the *secondary sequence* with the *second sequence*” must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

*Claim Objections*

2. Claims 1-6, 8, and 17-23 are objected to because of the following informalities:

Claim 1, line 8: “a response” is suggested changing to “a response message from the mobile station”;

line 9: “a response message” is suggested changing to “the response message”.

Claim 2, page 32 line 21-22: “channel orthogonal codes” is suggested changing to “the orthogonal codes”.

Claim 6, line 10: “the scrambling code generating” is suggested changing to “the scrambling codes generating”

Claim 8, line 8: “a mask” is suggested changing to “the mask”.

Claim 17, line 9: “generate secondary sequence” is suggested changing to “generated a secondary sequence”;

line 17: “secondary scrambling code” is suggested changing to “a secondary scrambling code”.

Claims 3-5, and 18-23 are directly or indirectly dependent on the objected claims 1 and 17.

Appropriate corrections are required.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-8, 11, and 20-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, line 14: "the scrambled channel signals" lacks antecedence.

Claim 2, page 32 line 17: "during channel assignment" is not clear which/what step of the claim 1 is the "channel assignment";

Claim 6, lines 13-14: "the masked sequence" lacks antecedence.

Claim 7, line 21: the word "it" in "when it is required" is not clear what is the "it": the method, the mobile station, or the system.

Claim 8, lines 11 & 12: "scrambling codes" lacks antecedent basis, the generating step only generates *a* second scrambling code.

Claim 11, "a common control channel" is the same a common control channel in claim 9, then changing "a common control channel" to "the common control channel"; if it is not the same a common control channel in claim 9, then indicate it is another common control channel such as by numbering the common control channels.

Claim 20, "the mask for producing the secondary scrambling code" lacks antecedence.

Claims 21, "the most significant bits of each of the masks" lacks antecedent basis in this claim or its parent claims.

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Claims 22, “the least significant bits of each of the masks” lacks antecedent basis in this claim or its parent claims.

Claims 3-5, 7, 9-16, and 18-23 are directly or indirectly depend on the 112 rejected independent claims.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 17-19, and 23 are rejected under 35 U.S.C. 102(e) as being anticipated by Samsung Electronics Co. TSGR1#6(99)915 (“Multiple-Scrambling Code”, TSG-RAN Working Group 1, Meeting #5” listed in IDS).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

Regarding **claim 17**, TSGR1#6(99)915 discloses an apparatus for producing scrambling code, comprising:

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A first shift register memory (Figure 1, shift register 1) for generating a first sequence (output of shift register 1), said first shift register memory having a plurality of registers (18 registers);

A masking section for masking the first sequence (Figure 1, the Masking function is the masking section) to generate a secondary sequence (the output of the Masking function is the secondary sequence);

A second shift register memory (Figure 1, shift register 2) for generating a second sequence (output of shift register 2), said second shift register memory having a plurality of registers (18 registers);

A first adder (Figure 1, the adder producing the Primary Scrambling code is the first adder) for adding the first sequence (the output from the shift register 1) with the second sequence (the output of the shift register 2); and

A second adder (Figure 1, the adder producing the Secondary Scrambling code is the second adder) for adding the secondary sequence (the output from the Masking function) with the second sequence (the output from shift register 2).

Regarding **claim 18**, TSGR1#6(99)915 discloses a first XOR gate (Figure 1, the  $\oplus$  of the shift register 1) for adding certain lower bits (bit 0 and bit 7) of the first shift register memory to produce the most significant bit (bit 17) of the first shift register based on a generator polynomial of the first sequence (this is the well known in the art to producing a scrambling/PN code).

Regarding **claim 19**, TSGR1#6(99)915 discloses a second XOR gate (Figure 1, the  $\oplus$  of the shift register 2) for adding certain lower bits (bit 0, bit 5, bit 7 and bit 10) of the second shift register memory to produce the most significant bit (bit 17) of the second shift register based on

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a generator polynomial of the first sequence (this is the well known in the art to producing a scrambling/PN code).

Regarding **claim 23**, TSGR1#6(99)915 discloses the adders are XOR gates (Figure 1).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US 5923650) in view of Terashima (US 6385232 B1) and Terasawa et al. (US 6385264 B1).

Regarding **claim 7**, Chen et al. discloses a channel communication method for a mobile station, comprising the steps of:

transmitting a channel assignment request to a base station, when it is required to assign a new channel in column 23 lines 42-48 wherein the traffic/secondary code channel is assigned during the call set up with a cell (i.e. a base station). The CDMA call set up comprising the mobile station (remote station) sending the message to the base station for communication channel/access link set up, this is well known in the art (column 6 lines 47-60);

Receiving the ID of a secondary scrambling code from the base station, transmitting a response message to the base station in column 23 lines 58-61 wherein the ID of the assigned secondary code channels is transmitted to mobile station that the mobile station transmitting a response (transmitting the data) over the secondary/traffic channel; and



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generating the secondary scrambling code and descrambling a downlink channel signal with the generated secondary scrambling code (as the mobile station using the assigned secondary code channel communicates to the base station, it generates the secondary scrambling code and descrambling a downlink channel signal with the generated secondary scrambling code, column 23 lines 58-59).

However, Chen et al. does not specify using a mask to generate a secondary scrambling code with 4 bits ID.

With respect to using a mask to generate a secondary scrambling code, Terashima teaches using a mask to generate a secondary scrambling code (FIG.5 the short code is the secondary scrambling code, the mask is generated from 46). Terashima's teaching generates multi scrambling codes to synchronization detect device. Therefore, it would have been obvious to one skilled in the art at the time of the invention to have the secondary code generator taught by Terashima in Chen et al.'s remote station (FIG.2 64 DEMOD), for the purpose of accurately identifying codes to be detected at high speed and having a efficient circuit (column 6 lines 19-22).

With respect to the 4 bits ID, Terasawa et al. teaches 16 secondary codes that needs 4 bits to identify the 16 codes (column 2 lines 52-54). Through Tersawa et al.'s teaching the apparatus/method is prepared to accommodate the Wideband CDMA. Therefore, it would have been obvious to one skilled in the art at the time of the invention to have the 4 bits ID for the 16 codes to synchronize the received signal for the proposed W-CDMA system (column 1 lines 53-60, column 2 lines 49-54).

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9. Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Popvic' (US 6567482 B1)

Regarding **claim 9**, Popovic discloses a method for a base station in CDMA, comprising:

Transmitting spread data to a mobile station using a primary scrambling code representative of an identification code provided to the base station over a common channel (column 3 lines 47-49 wherein the downlink direction is the BS transmitting to the remote terminal over a common channel for synchronization sequence);

transmitting to a mobile station an ID of a secondary scrambling code (column 13 lines 39-51 wherein the MS get the secondary scrambling code from the MS) for expanding a capacity of channels used (column 5 lines 32-40 wherein plural scrambling code used to increase capacity).

Regarding **claim 10**, Popovic discloses 16 signatures which needs 4 bits to identify (column 4 lines 40-50).

Regarding **claim 11**, Popovic discloses the one sequence (the primary one) transmitted over a common control channel (column 5 lines 24-27).

Regarding **claim 12**, Popovic discloses the other sequence (the secondary for increasing capacity) is over the access channel (column 3 lines 51-60, Fig.8B wherein the column 5 lines 33-36) to communicate with the BS.

10. Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terasawa et al. (US 6385264 B1) in view of Nystrom et al. (US 6526091 B1).

Regarding **claim 13**, Terasawa et al. discloses a channel code communication method for a mobile station in a CDMA communication system (Abstract), comprising the steps:

Acquiring an ID of a primary scrambling code representative of an identification code provided to a base station (column 1 line 54-column 2 line 3) during initial sync setting (column 2 lines 40-49);

Receiving a secondary scrambling code from the base station (FIG. 1 & FIG. 3 wherein the secondary scrambling code generated);

Generating the secondary scrambling code by combining the primary scrambling code and the secondary scrambling code (FIG. 4).

However Terasawa et al. does not explicitly specify the ID of the scrambling code and despreading a received data signal with the generated secondary scrambling code.

Nystrom et al. teaches the ID of the scrambling code is in the signal (FIG. 9A, column 3 lines 50-55 wherein the ID of the code groups are encoded in the signals) and despreading a received data signal with the generated secondary scrambling code (FIG. 3 SSC & column 5 lines 20-33, FIG. 7 702). Nystrom et al.'s teaching determines a scrambling code group for a received signal. Therefore, it would have been obvious to one skilled in the art at the time of the invention to have the ID of the scrambling code in the signal for the purpose of helping synchronize the mobile station to the base station and improving the synchronization channels (column 3 lines 37-45);

Regarding **claim 14**, further Nystrom et al. teaches the secondary code having 16 possible different sequences that can be identified using 4 bits (column 5 lines 20-33).

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Regarding **claim 15**, Terasawa et al. teaches the secondary scrambling code is received over a synch channel which is a common control channel (column 1 lines 52-65).

Regarding **claim 16**, Terasawa et al. teaches the secondary scrambling code is received over a downlink dedicated channel (column 2 line 65-67, column 3 lines 22-27, FIG.2/FIG.4).

11. Claim 20 is rejected under 35 U.S.C. 103(a) as being obvious over Samsung Electronics Co. TSGR1#6(99)915 ("Multiple-Scrambling Code", TSG-RAN Working Group 1, Meeting #5" listed in IDS) in view of Nystrom et al. (US 6526091 B1).

The applied reference has a common assignee instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).

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Regarding **claim 20**, further Nystrom et al. (US 6526091 B1) teaches the ID of the scrambling code is in the signal (FIG.9A, column 3 lines 50-55 wherein the ID of the code groups are encoded in the signals). Nystrom et al.'s teaching determines a scrambling code group for a received signal. Therefore, it would have been obvious to one skilled in the art at the time of the invention to have the ID of the scrambling code in the signal for the purpose of helping synchronize the mobile station to the base station and improving the synchronization channels (column 3 lines 37-45).

*Allowable Subject Matter*

12. Claims 1-6 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

13. Claims 8 and 21-22 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

14. The following is a statement of reasons for the indication of allowable subject matter:

Claim 1 is allowable over prior art of record because the prior art of record does not teach or suggest, alone or in a combination, among other things, at least a method as a whole, the combination of elements and features as claimed, which includes receipt of a dedicated channel assignment request from a mobile station, transmitting the determined ID of the secondary scrambling code to the mobile station and awaiting a response, upon receipt of the response message from the mobile station, generating a primary scrambling code and a secondary scrambling code.

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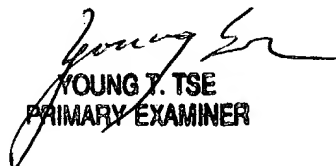
***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edith M Chang whose telephone number is 571-272-3041. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jayanti Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Edith Chang  
August 8, 2004

  
YOUNG T. TSE  
PRIMARY EXAMINER